2023 Spring Flood Outlook

February 9, 2023
1:18 PM

For the rivers and streams in northeastern SD, portions of central SD, and portions of west central MN.

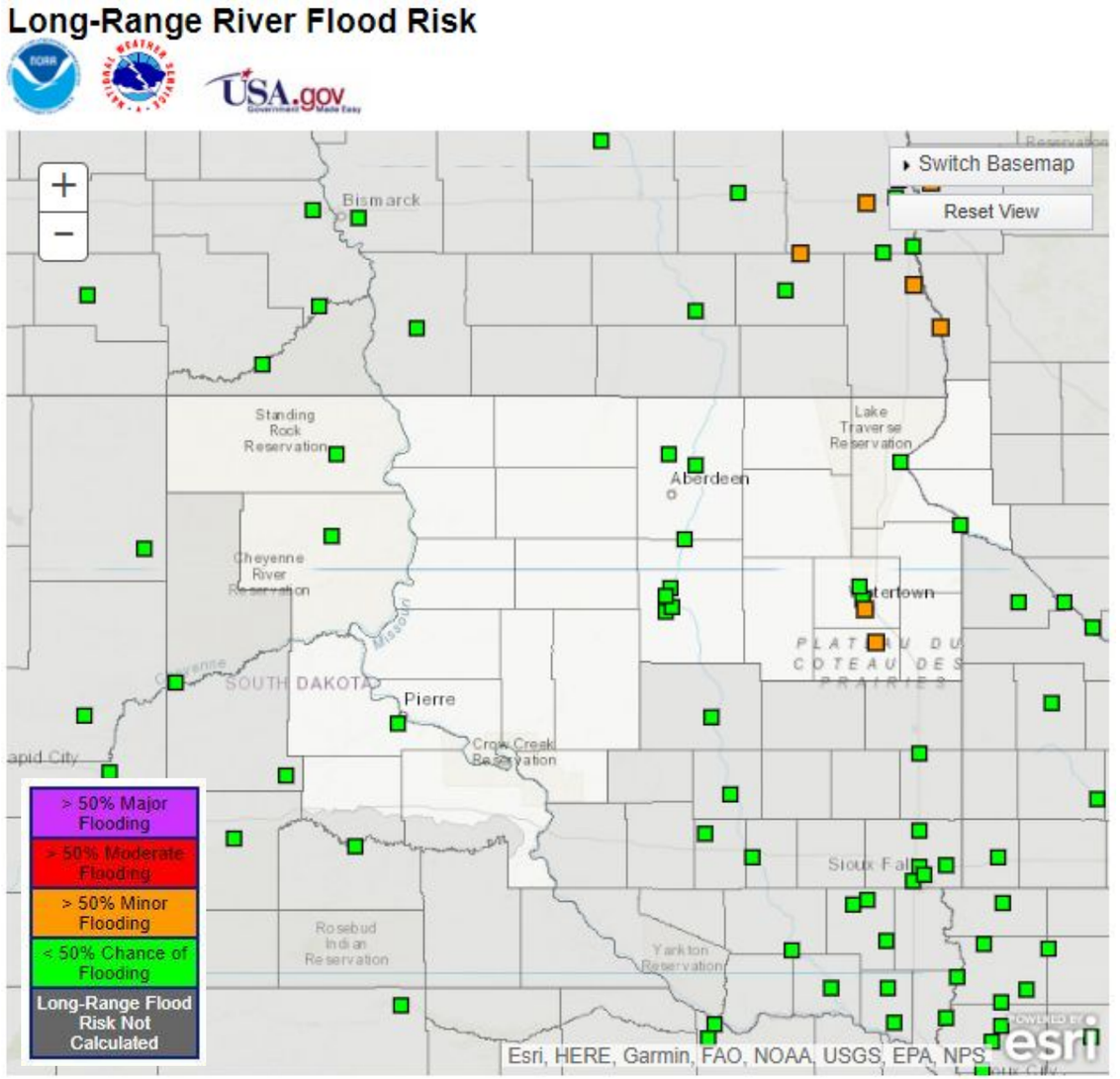
Key Messages

- Even though there is snow pack across most of the area, due to ongoing drought conditions, the chances for minor, moderate, or major flooding across much of the region are generally below normal. The exception is across the Big Sioux basin in Codington and Hamlin counties, where the chances are above normal for minor flooding.

- The flood threat through this spring, both in location and severity, will largely be determined by future rain or snowfall.

Next Scheduled Briefing

- The next update will be Thursday, February 23. However, real time information can be found at weather.gov/abr.

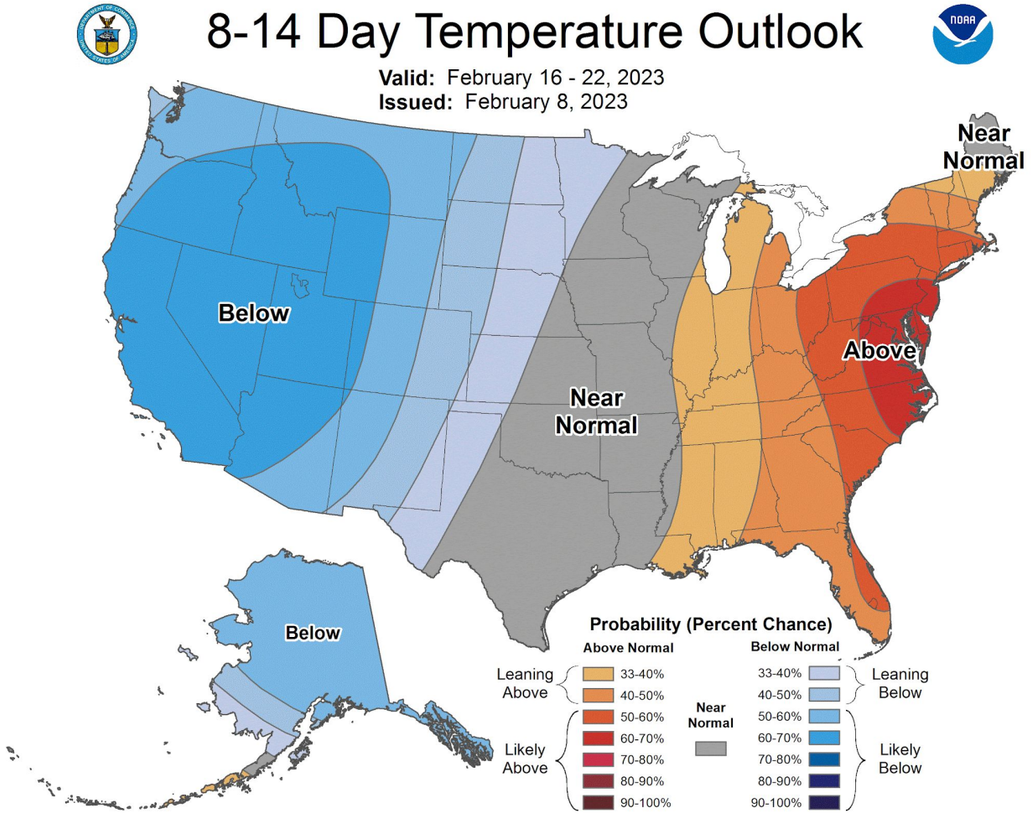


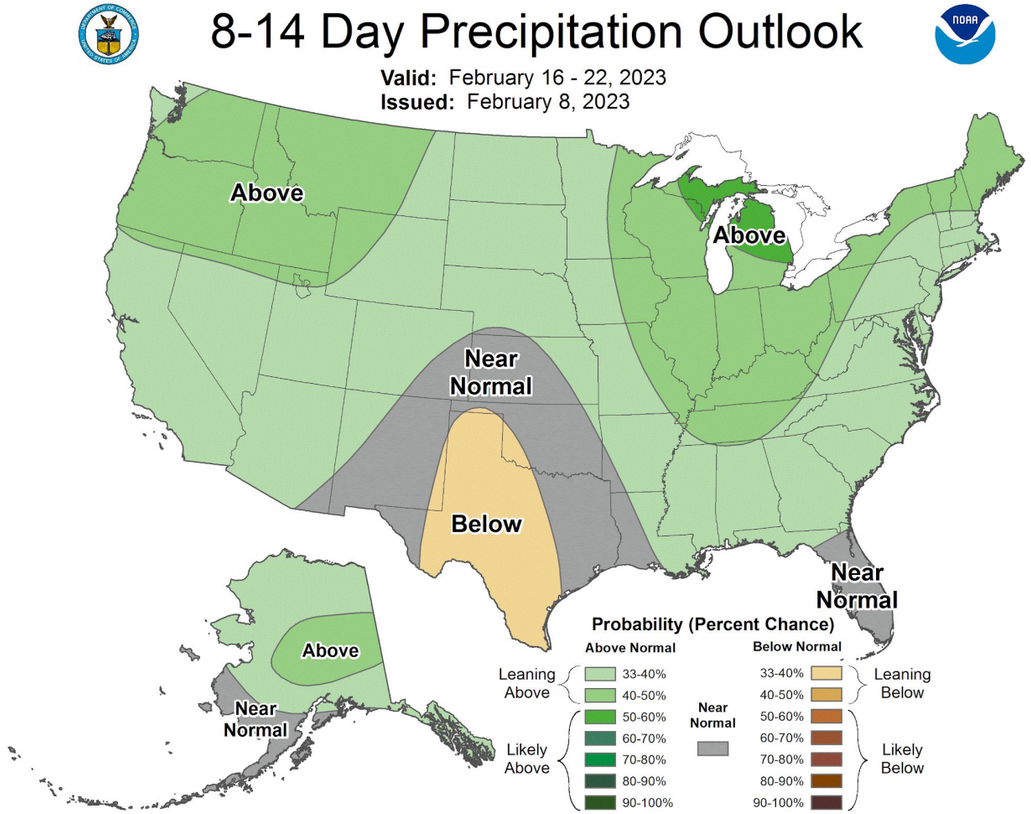
Temperature and Precip Outlook

February 9, 2023
1:18 PM

Overview

➔ The outlook for the next two weeks is for increased chances for below normal temperatures and above normal precipitation.





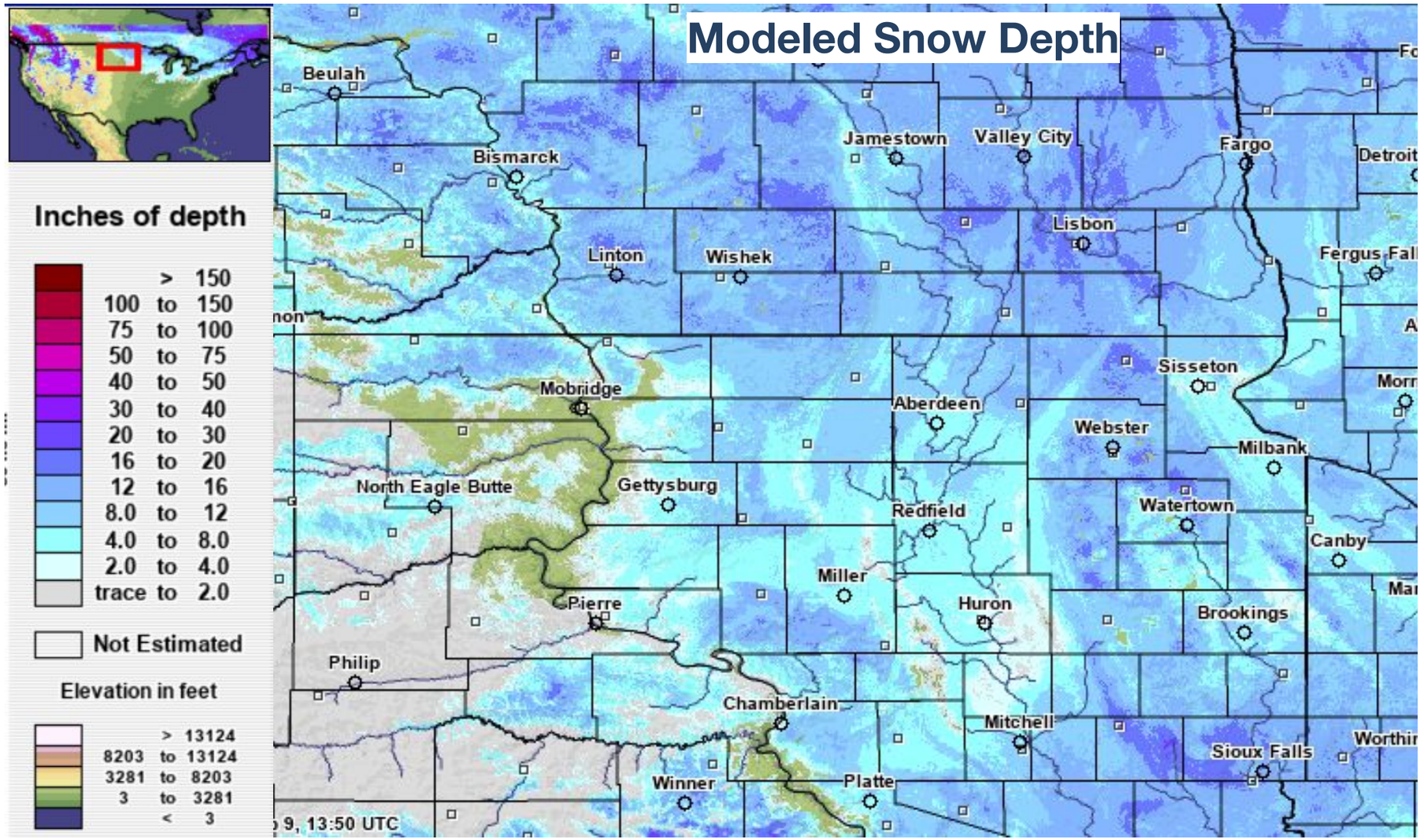
➔ The 90 day outlook for February through April shows equal chances for below, near or above normal precipitation and increased chances for below normal temperatures.

Current Snow Pack

February 9, 2023
1:18 PM

Overview

- Snowpack is highly variable across the area.
- Snowpack west of the Missouri River is highly variable ranging from no snow to pockets of over 12 inches
- 8 to 16 inches of snowpack along the North Dakota border and in an area between the James River Valley and the Minnesota border.
- From the Missouri River to the James River Valley, snow depths are in the 2 to 8 inch range.

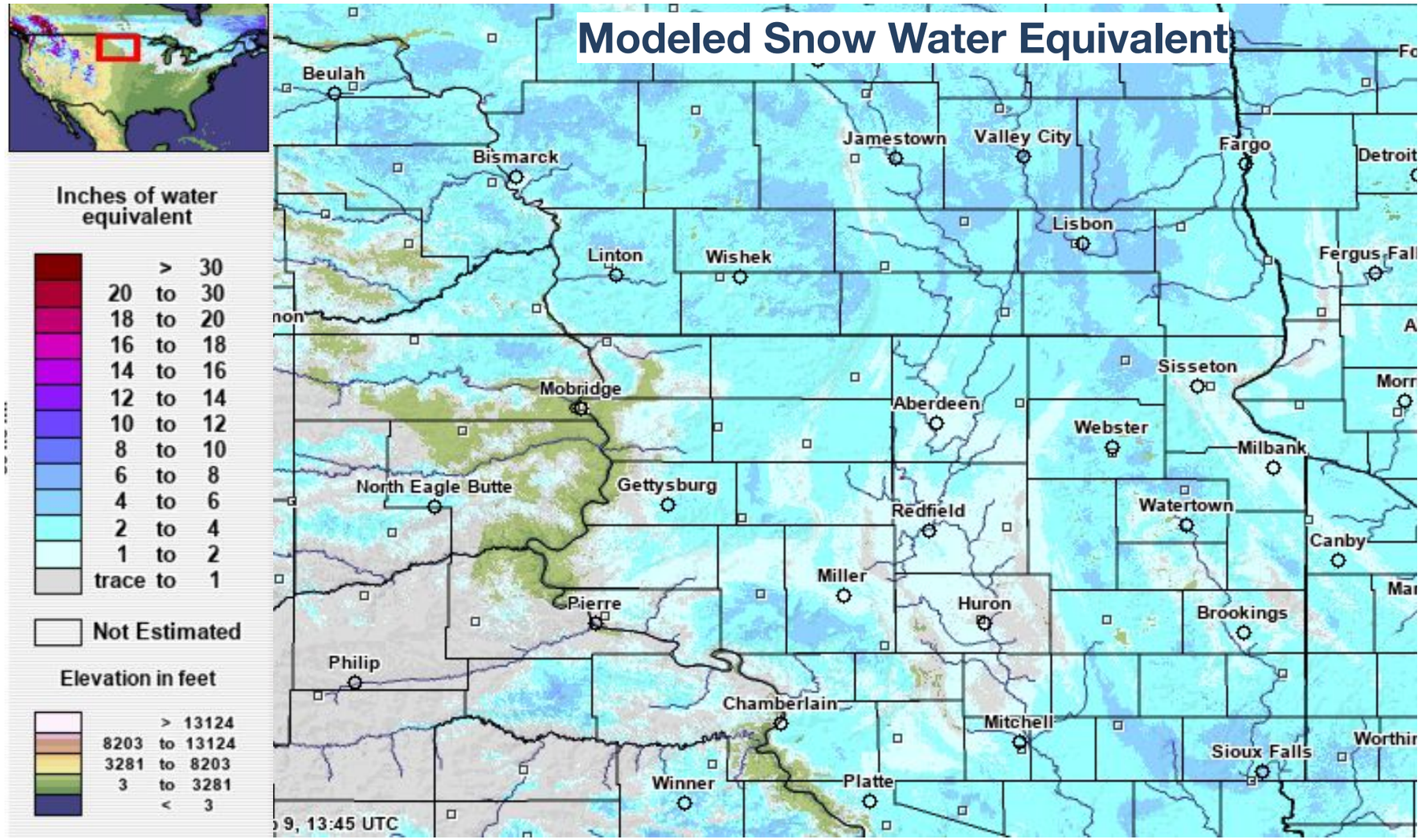


Current Snow Water Equivalent

February 9, 2023
1:18 PM

Overview

- Along the North Dakota border from Britton eastward into west central Minnesota the water equivalent of this snowpack is generally 1 to 3 inches.
- The remainder of the area generally has a water equivalent of 0.5 inch or less.

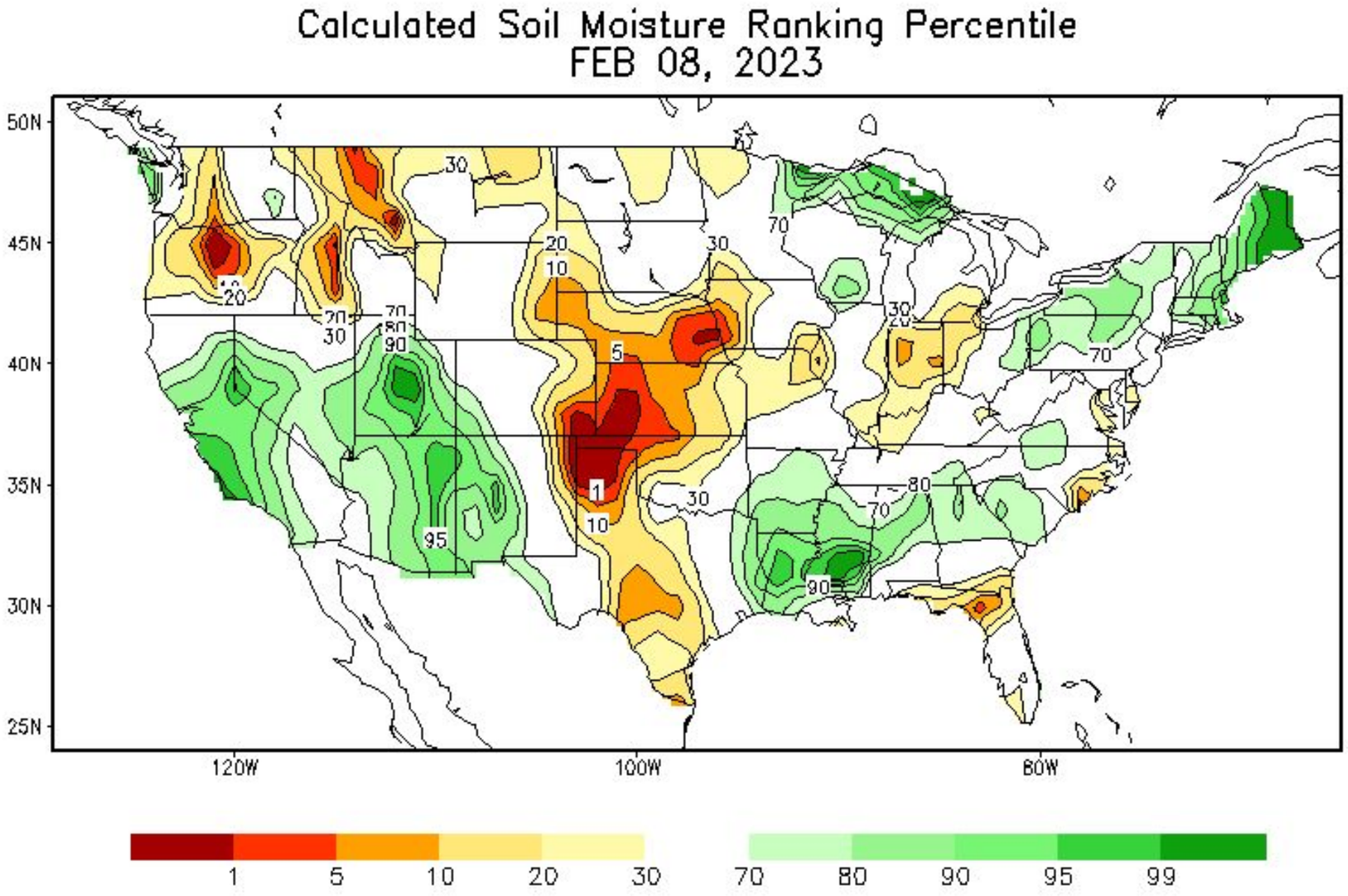


Current Soil Conditions

February 9, 2023
1:18 PM

Overview

- Soil moisture is near to below normal across the entire area.
- Frost depths are below 1 foot across northeastern South Dakota, and generally in the 1 to 4 foot range elsewhere.
- The entire region is in Abnormally Dry to Moderate drought conditions, with a portion of far north central South Dakota in Severe drought conditions.



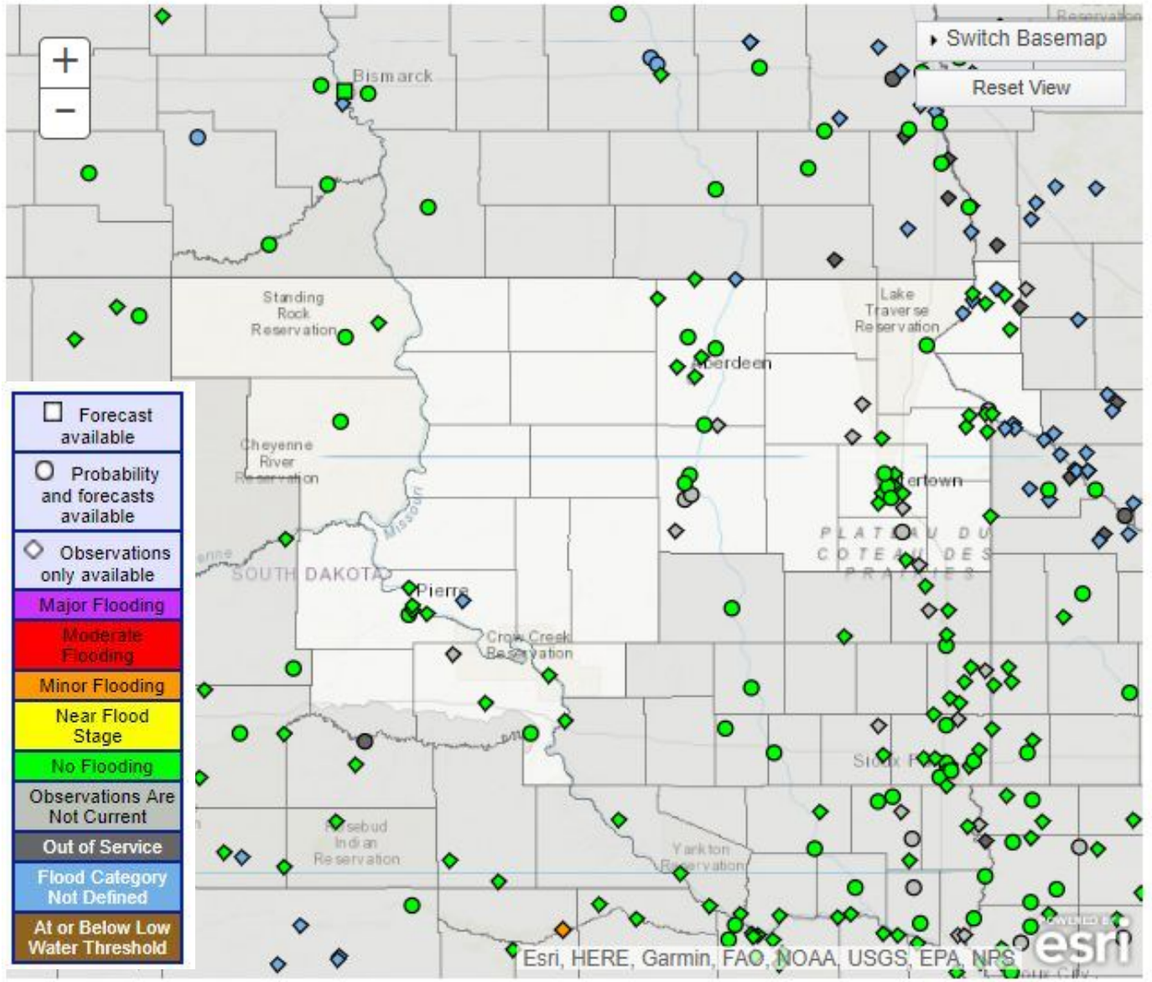
Current River Conditions

February 9, 2023
1:18 PM

Overview

- All of the rivers in the area are iced over.
- River levels and flows are generally running near to below normal across the region.
- The threat for break-up ice jams appears low at this time. Any potential ice jam flooding will be determined by how fast the ice melts and how much additional flow can get into the rivers to raise and break up the existing ice cover before it melts.

AHPS Observed Gauge Map



Probabilistic Outlooks

February 9, 2023
1:18 PM

Probabilities for minor...moderate and major flooding

Overview

- In Table 1 to the right, the current (CS) and historical (HS) or normal probabilities of exceeding minor, moderate,and major flood stages are listed for the valid time period.
- CS values indicate the probability of reaching a flood category based on current conditions.
- HS values indicate the probability of reaching a flood category based on historical or normal conditions.
- When the value of CS is more than HS, the probability of exceeding that level is higher than normal. When the value of CS is less than HS, the probability of exceeding that level is lower than normal.

...Table 1--Probabilities for minor...moderate and major flooding...
Valid Period:
Valid Period: 02/13/2023 - 05/14/2023

Location	Categorical Flood Stages (FT) Minor	Mod	Major	Current and Historical Chances of Exceeding Flood Categories as a Percentage (%) Minor CS	Minor HS	Moderate CS	Moderate HS	Major CS	Major HS
:Elm River									
Westport	14.0	16.0	19.0	12	28	9	22	5	9
:James River									
Columbia	13.0	16.0	18.0	44	52	37	44	24	33
Stratford	14.0	17.0	18.5	44	54	25	41	17	29
Ashton	13.0	14.0	16.0	39	53	37	52	27	44
Redfield	20.0	22.0	25.0	21	42	20	41	16	39
:Snake Creek									
Ashton	11.5	13.0	16.0	21	43	20	40	15	34
:Turtle Creek									
Redfield	7.0	10.0	15.0	29	47	19	43	11	30
:Big Sioux River									
Watertown 10NW	10.0	11.0	12.0	10	18	5	<5	<5	<5
Watertown Conifer	9.0	10.0	12.0	46	33	20	25	<5	<5
Watertown Broadwy	10.5	11.0	13.5	55	35	44	33	5	<5
Castlewood	9.0	11.0	16.0	64	40	24	28	<5	<5
:Grand River									
Little Eagle	15.0	17.0	21.0	<5	24	<5	17	<5	6
:Moreau River									
White Horse	21.0	23.0	25.0	<5	19	<5	16	<5	11
:Bad River									
Fort Pierre	21.0	25.0	27.0	6	8	<5	5	<5	<5
:Little Minnesota									
Peever	17.0	22.0	24.0	16	24	<5	<5	<5	<5
:Minnesota River									
Big Stone Lake	971.5	973.0	975.0	<5	6	<5	<5	<5	<5

Probabilistic Outlooks

February 9, 2023
1:18 PM

Exceedance Probabilities

Overview

➔ In Table 2 to the right, the 95 through 5 percent columns indicate the probability of exceeding the listed stage levels (FT) for the valid time period.

...Table 2--Exceedance Probabilities...

Location	Chance of Exceeding Stages at Specific Locations Valid Period: 95%	90%	75%	50%	25%	10%	5%
:Elm River							
Westport	5.3	5.5	6.1	7.3	8.8	15.5	18.6
:James River							
Columbia	8.1	8.7	10.3	12.3	17.8	18.7	19.5
Stratford	9.0	9.3	11.0	13.2	17.0	19.4	20.1
Ashton	5.7	6.1	7.2	9.3	17.0	23.6	28.6
Redfield	5.4	5.7	7.0	9.4	16.6	31.9	33.1
:Snake Creek							
Ashton	4.7	4.9	5.8	6.9	8.3	20.0	24.2
:Turtle Creek							
Redfield	3.3	3.3	4.1	4.9	7.7	15.7	17.3
:Big Sioux River							
Watertown 10NW	6.2	6.5	7.5	8.5	9.2	10.0	11.0
Watertown Conifer	6.2	6.5	7.6	8.8	9.7	10.4	11.7
Watertown Broadwy	7.6	7.9	9.1	10.7	11.9	12.7	13.5
Castlewood	6.9	7.4	8.2	9.7	10.9	11.9	12.8
:Grand River							
Little Eagle	4.9	5.0	5.8	6.6	7.8	9.5	11.3
:Moreau River							
White Horse	4.4	4.8	6.0	6.9	9.1	10.7	14.1
:Bad River							
Fort Pierre	6.1	6.5	7.2	9.9	14.1	17.5	23.4
:Little Minnesota							
Peever	12.3	12.5	12.8	14.2	15.5	17.7	18.8
:Minnesota River							
Big Stone Lake	968.0	968.0	968.0	968.0	968.3	969.5	970.3

Probabilistic Outlooks

February 9, 2023
1:18 PM

Non-Exceedance Probabilities

Overview

➔ In Table 3 to the right, the 95 through 5 percent columns indicate the probability of falling below the listed stage levels (FT) for the valid time period.

...Table 3--Nonexceedance Probabilities...

LOCATION	Chance of Falling Below Stages at Specific Locations Valid Period: 95%	90%	75%	50%	25%	10%	5%
:Elm River							
Westport	4.0	4.0	4.0	4.0	4.0	4.0	4.0
:James River							
Columbia	4.6	4.6	4.6	4.6	4.6	4.6	4.5
Stratford	5.9	5.9	5.9	5.9	5.9	5.9	5.8
Ashton	3.6	3.6	3.6	3.6	3.6	3.6	3.6
Redfield	3.4	3.4	3.4	3.4	3.4	3.4	3.4
:Snake Creek							
Ashton	2.8	2.8	2.8	2.8	2.8	2.8	2.8
:Turtle Creek							
Redfield	3.0	3.0	3.0	3.0	3.0	3.0	3.0
:Big Sioux River							
Watertown 10NW	3.8	3.8	3.8	3.8	3.8	3.8	3.8
Watertown Conifer	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Watertown Broadwy	5.0	4.7	4.5	4.5	4.5	4.5	4.5
Castlewood	4.0	4.0	3.9	3.9	3.9	3.8	3.8
:Grand River							
Little Eagle	2.6	2.6	2.5	2.4	2.4	2.3	2.3
:Moreau River							
White Horse	2.8	2.8	2.7	2.7	2.6	2.6	2.5
:Bad River							
Fort Pierre	0.7	0.7	0.6	0.5	0.5	0.5	0.5
:Little Minnesota							
Peever	10.1	10.1	10.1	10.1	9.8	9.8	9.8
:Minnesota River							
Big Stone Lake	967.2	967.2	967.2	967.2	967.2	967.2	967.2

More Information

These long-range probabilistic outlooks contain forecast values that are calculated using multiple season scenarios from 30 or more years of climatological data, including current conditions of the river, soil moisture, snow cover, and 30 to 90 day long-range outlooks of temperature and precipitation. By providing a range of probabilities, the level of risk associated with long-range planning decisions can be determined.

These probabilistic forecasts are part of the National Weather Service advanced hydrologic prediction service.

Visit our website weather.gov/abr or water.weather.gov/ahps2/long_range.php?wfo=ABR for more weather and water information.